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INFORMATION FROM "TECHNOLOGY OF ELECTROCHEMICAL PRODUCTION"
BY L. L. KUZ'MIN, V. G. KHOMYAKOV, AND V. P. MASHOVETS

The book presents a general course on the technology of electrochemical production. Part I describes the technology of the chemical sources of electric energy, such as galvanic cells and lead and alkaline storage batteries. Part II deals with electrokinetic processes, the technology of electrolytic processes for production of hydrogen and oxygen and chlorine and alkalis, as well as products of oxidation and reduction processes. Part III analyzes problems in electrometallurgy and electrolytic metal plating.

The book, authorized for use as a textbook for students in chemical and technological higher educational institutions, may also prove useful to students in metallurgical higher educational institutions and to engineers in the electrochemical industry. Five thousand copies of this edition have been published.

Excerpts from the introduction and the table of contents follow.

EXCERPTS FROM INTRODUCTION

In 1913, the total power capacity of all Russian electric power stations was 1,098,000 kw, i.e., Russia was one of the most backward countries as far as electric power production is concerned. Under the circumstances, it is not surprising that the electrochemical industry was in a rudimentary state, notwithstanding the fact that many inventions and discoveries in the field of electrochemistry had originated in Russia.

This situation changed after the October Revolution, as a consequence of the launching of the plan for the electrification of Russia.

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At the beginning of 1941, the capacity of USSR electric power stations was 11 times higher than before the revolution, and the production of electric energy was 25 times higher. This means that with respect to electric power production, the USSR occupied the second place in Europe and the third in the world.

Thus, during the period of the first three Stalin Five-Year Plans, the prerequisites for the development of a powerful and modern electrochemical industry were created in the USSR. During the period in question, a number of new electrochemical industries came into being. These include the production of aluminum, magnesium, sodium, and zinc; the refining of lead and nickel; and the production of hydrogen and peroxides. The industries which had already existed in prerevolutionary Russia (copper refining, chlorine production, and the production of lead storage batteries) were considerably expanded. Some of these industries are now the largest in the world.

The law in regard to the Five-Year Plan provides the following increases during 1946 - 1950; doubling aluminum production and increasing the production of magnesium by a factor of 2.7, nickel by a factor of 1.9, zinc by a factor of 2.5, copper by a factor of 1.6, and increasing caustic soda production by 278,000 tons. Furthermore, the current Five-Year Plan specifies an increase in the capacity of electric power stations of 11.7 million kw, thus bringing the total capacity of USSR electric power stations up to 22 million kw.

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